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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/730,836	12/07/2000	Sang In Kim	8733.325.00	8708
30827	7590	07/22/2004	EXAMINER	
MCKENNA LONG & ALDRIDGE LLP			DUONG, THOI V	
1900 K STREET, NW			ART UNIT	
WASHINGTON, DC 20006			PAPER NUMBER	
			2871	

DATE MAILED: 07/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/730,836

Applicant(s)

KIM ET AL.

Examiner

Thoi V Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-6 and 8-20 is/are rejected.
- 7) ☒ Claim(s) 3 and 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to the Amendment filed April 13, 2004.

Accordingly, claims 1 and 9 were amended. Currently, claims 1-20 are pending in this application.

Response to Arguments

2. Applicant's arguments with respect to claims 1 and 9 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 4-6, and 8-20 are rejected under 35 U.S.C. 103(a) as being obvious over Kim et al. (USPN 6,038,008) in view of Hiraishi et al. (USPN 6,204,907 B1).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR

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1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Re claims 1, 8, 9 and 11-15, as shown in Figs. 7A-7H, Kim et al. discloses a method of fabricating a liquid crystal display (LCD) having a thin film transistor with a gate electrode 117a, a gate insulating film 123, an active layer 122, an ohmic contact layer 125, a source electrode 115a, and a drain electrode 115b on a transparent substrate 111, said method comprising:

forming an organic passivation layer 126 over the transparent substrate and over the thin film transistor (Fig. 7F and col. 4, line 60 through col. 5, line 2);

defining a contact hole 131 through the organic passivation layer to expose the drain electrode (Fig. 7F and col. 5, lines 3-8);

irradiating the organic passivation layer 126 with ultraviolet rays to form a buffer layer with roughened surface (Fig. 7G and col. 7, lines 8-10 and 25-29); and

forming a transparent pixel electrode (ITO) 104 (col. 4, lines 14-16) over the rough buffer layer and in the contact hole such that the pixel electrode contacts the

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drain electrode via the contact hole and such that the pixel electrode adheres to the buffer layer.

Re claims 2, 10, 16-18 and 20, Kim discloses that the organic passivation layer is comprised of an acrylic organic compound, or benzocyclobutene (BCB), or perfluorocyclobutane (PFCB) (col. 4, lines 60-67; col. 5, lines 1-2), which has a hydrophobic property and a low dielectric constant (col. 5, lines 65-67).

Re claims 4-6 and 19, Kim further discloses that the UV treating method is performed at the surface of the passivation layer which is substantially exposed to an atmosphere pressure as a normal processing pressure (col. 8, lines 7-11) to create a buffer layer with roughened surface for increasing adhesion to an ITO layer (col. 7, lines 25-29 and 45-47). Accordingly, the buffer layer is an oxide and inherently has a hydrophilic property and hence, the surface property of the organic passivation layer is changed by the UV treating method.

Kim et al. discloses all aspects of the instant invention except for a reaction with ozonized oxygen to change the surface property of the organic passivation layer as recited in claims 1 and 9. However, the method of irradiating an ultraviolet ray to a surface of the organic passivation layer in ozone atmosphere to make the surface rough is well known in the art as disclosed by Hiraishi et al. (col. 8, lines 26-35). Accordingly, the surface property of the organic passivation layer is changed due to a reaction with ozonized oxygen.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to irradiate the organic passivation layer with ultraviolet

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rays and make a reaction with ozonized oxygen to create a rough surface on the organic passivation layer (col. 8, lines 26-30).

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1, 2, 4-6 and 8-20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-10, 15-17 of Kim et al. (USPN 6,038,008) in view of Hiraishi et al. (USPN 6,204,907 B1).

The subject matter claimed in the instant application is fully disclosed in the Kim et al.'s patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: the organic passivation layer is comprised of an acrylic organic compound, or benzocyclobutene (BCB), or perfluorocyclobutane (PFCB) which has a hydrophobic property and a low dielectric constant. When the organic passivation layer is irradiated with UV rays, the surface property of the organic

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passivation layer is changed to become a roughened buffer layer. This buffer layer is an oxide and inherently has a hydrophilic property.

Kim et al. discloses all aspects of the instant invention except for a reaction with ozonized oxygen to change the surface property of the organic passivation layer as recited in claims 1 and 9. However, the method of irradiating an ultraviolet ray to a surface of the organic passivation layer in ozone atmosphere to make the surface rough is well known in the art as disclosed by Hiraishi et al. (col. 8, lines 26-35). Accordingly, the surface property of the organic passivation layer is changed due to a reaction with ozonized oxygen.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to irradiate the organic passivation layer with ultraviolet rays and making a reaction with ozonized oxygen to create a rough surface on the organic passivation layer (col. 8, lines 26-30).

Allowable Subject Matter

7. Claims 3 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

In addition to other elements as shown, none of the prior art of record suggests or discloses alone or in combination that the step of irradiating the organic passivation layer uses ultraviolet rays having wavelengths between about 100 to 200nm and produces a buffer thickness of 10A to 50A.

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The most relevant reference, USPN 6,038,008 of Kim et al., fails to disclose or suggest the wavelengths between about 100 to 200nm and a buffer thickness of 10A to 50A. The Kim et al.'s reference only discloses a UV treating method using high-energy (low-wavelength) radiation on the organic passivation layer to create a roughened buffer layer for increasing adhesion to an ITO layer.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

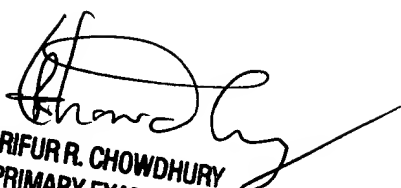
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (571) 272-2293.

Thoi Duong

07/15/2004


TARIFUR R. CHOWDHURY
PRIMARY EXAMINER